

# Open Cuts to Land and Culture: Strip Mining and its Impact on the Sense of Well-being of People in Rural Communities: A Case Study in the Hunter Region of Australia

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# Hunter Region NSW







# 200 Years of Change

## Large scale changes to the landscape

- Indigenous occupation for thousands of years
- Land clearing since the early C19 (cattle/sheep)
- Coal mining since C19
- Open-cut mining in the last two decades
- Large scale viticulture
- Large scale horse studs
- Large scale power industries
- Large scale industry/infrastructure



# The 'Tuscany' of the South?



# A Distressed Ecosystem?

- Loss of biodiversity
- Increase in erosion/siltation rates
- Increased salinity in land and river
- Increased nutrient flows/algal blooms
- Increased dust/particulates emissions
- Fallout from power stations (metals, dust)
- River engineering/flood controls
- Climate change impacts from local to global

Over 500 Square kms of open cuts in the region





From This ....



To this!



# Distressed People?

- High rates of general illness?
- Consistent local reports of unusual cancers
- High levels of respiratory disease (asthma)
- Perceived high rates of mental illness
- Reported high rates of male suicide
- High rates of heart disease
- Ongoing social protest about rate and scale of development
- Constant change in population structure



# Relating Ecosystem and Human Distress

- International literature on environmental disturbance and adverse physical health outcomes (Rapport 1999, Patz et al 2001)
- New research suggesting links between ecosystem distress and psychosocial distress based on “sense of place” (Horwitz 2001, Albrecht 2001)
- International literature on mining and well being and quality of life (Lebel and Burley 2003, Mergler 2003, Noronha 2003, Maclean et al 2003).

# Ecosystem Distress: A factor in Psychosocial Well-Being?

“Rarely is environmental change regarded as a possible contributing factor, yet landscape degradation, manifesting as soil erosion, river or wetland degradation, or increasing salinity on previously productive land, may underlie or exacerbate ... the contributing factors.” (Horwitz et al 2001)

# Ecosystem and Human Distress

“In the salt affected wheat belt of WA, the loss of productive land is a loss of potentiality ... for growing wheat as well as native vegetation. Farmers experience the loss of potentiality of their land as a personal failure with sometimes tragic results (suicide)... Hence the connection between ecosystem health and human health is abundantly clear, and in both cases the loss of potential to achieve complexity and diversity can be documented and measured” (from Albrecht 2001)



# Endemic Sense of Place

- The awareness that a particular and unique regional location has a positive influence on one's sense of psychological and cultural well being
- A sense of belonging that comes from strong “place identity” and place attachment
- A sense of profound distress or “loss” if such place identity is threatened or destroyed (solastalgia)
- A sense well understood by indigenous people B.C.

# Solastalgia: A New Concept in Identity

**Solastalgia** is defined as the distress and pain experienced when the place where one resides is under assault, change and destruction. It is manifest in the loss of the sense of belonging to a particular place and a feeling of desolation about its disappearance.

Has its origins in *solatium* = console and *algos* = pain.

Felt by indigenous people and others when their home and environment are under threat

# Solastalgia

**The diagnosis of solastalgia is based on the recognition of the distress within an individual or a community about the loss of endemic sense of place.**

**The factors that cause solastalgia can be both natural and artificial.**

**Solastalgia has connections to both the psychological sense of desolation and its physical and environmental context.**

**The cure for solastalgia is to provide solace and eliminate distress through empowerment and restoration of 'home' or sense of place.**



# The Upper Hunter Study

## A Transdisciplinary Approach

**“Transdisciplinary thinking ... goes beyond (transcends) the boundaries of existing disciplines or fields of knowledge ...” (Higginbotham et al 2001)**

**The collaborative interaction of diverse ways of explaining complex issues and problems**

**The creation of a common conceptual framework that unites what were formerly discipline-based insights**

**“Interventions with the greatest probability of success follow from a synthesis of knowledge from disciplinary collaboration” (Albrecht et al 1998)**

# Research Questions

Do residents with a high sense of place identity and attachment experience greater distress at land degradation occurring within their locality than those who have no or low sense of place identity?

Do these residents experience higher levels of solastalgia than other residents?

# Aims of Study, To:

- Gather primary qualitative data on residents' perceptions of ecosystem distress, their own distress (emotional, behavioural and social) and sense of place attachment
- Measure the degree of solastalgia
- Develop quantitative (scaled) measures of distress from landscape desolation and individual place identity
- Gather secondary quantitative data on dimensions of physical health (respiratory disease, cardiovascular disease)

# Methodology

The Transdisciplinary Team will collect rich historical, social and cultural data as a foundation for generating valid survey instruments and theoretical insights about the quality of life connections between ecosystem and human health



# Methodology

## Qualitative

- Key informant interviews
- In-depth semi-structured interviews  
(in progress)

## Quantitative

- Development of an instrument to measure distress and identity (2 scales Lickert 5 category response format)
- Instrument Pre-testing
- A validation survey (to be undertaken)

# Qualitative Research:Some Community Perceptions

“It’s distressing ... it almost reduces me to tears to think about it (mining)”

“Those that look at it (mining) get frustrated and angry and have some sadness”

“We are going the wrong way”

“Frustrating ... is a very good word to describe the position we find ourselves in”

“A lot of changes were going on around you but nothing was changing to give you some power to do something about it”

# Preliminary Findings

- Mine site rehabilitation seen as totally inadequate
- Perceived health threats linked to known forms of industrial and mine site pollution (power stations)
- Perceived health threats from unknown sources (dioxins from burning wood)
- Concerns over loss of ecosystem health
- Longer term residents both likely to experience solastalgia and try to fight its causes
- Short term residents?

# Preliminary Observations

- No mine proposal has ever been rejected
- We see a new form of colonialism/ imperialism ... old farming families being pushed out of the region by “king coal”
- People now reacting to the scale of changes (distress, solastalgia, migration)
- their increasing knowledge about what is happening leads to increasing frustration because they cannot stop it



# Conclusions

- Citizens feels that their interests are not adequately represented (poor consultation)
- Cumulative impacts of mining not being investigated (poor science)
- Science is not adequate to give expression to their loss of quality of life (social science?)
- Some resilience in the face of overwhelming odds
- Circumstances are similar to people in the 'South' with solastalgia and dispossession universal experiences

# Exporting the Hunter Valley

